1708

SERVICE DATA
FILE NO. 050-171
NTSC SYSTEM

TOSHIBA

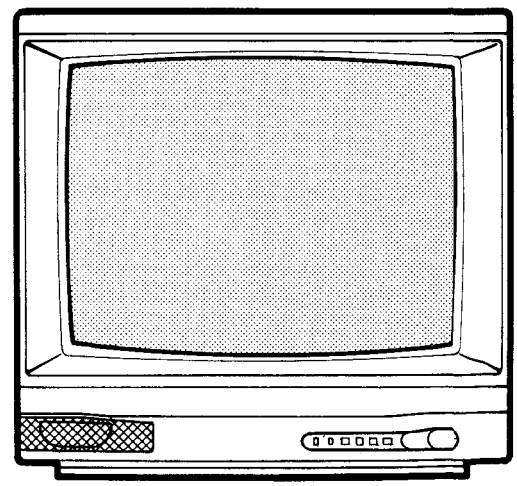
COLOR TELEVISION

CF1922J : CF1921J

(TAC8920) (TAC8920)

CA20219 : CA20209

(TAC8925) (TAC8925)



SPECIFICATIONS

Input Power Rating :	68 watts (average), 120 volts AC, 60 Hz
Antenna Input Impedance :	75 ohm unbalanced type for UHF/VHF/CATV
Receiving Channels :	12 VHF channels ..... channels 2 to 13 56 UHF channels ..... channels 14 to 69 CATV channels ..... Mid-band A8 to I Super-band J to W Hyper-band AA to ZZ, AAA, BBB Ultra-band 65 to 94, 100 to125
Intermediate Frequencies :	Picture I-F carrier frequency ..... 45.75 MHz Sound I-F carrier frequency ..... 41.25 MHz Color sub-carrier frequency ..... 42.17 MHz
Picture Tube :	19 inches A48JQH93X(LW), 185 sq. inches of viewable area, Tinted phospher, 90° deflection
Audio Power :	1.0 watt (undistorted, maximum)
Speaker :	2" x 3.5" oval
Cabinet :	Plastic, Table Type
Dimensions :	Height ..... 18-37/64 inches Width ..... 20- 5/64 inches Depth ..... 18- 1/ 4 inches
Weight :	41.8 lbs.
Features :	Frequency synthesized tuning system, 181-channel cable compatible, 26-key remote control, On-screen display, Digital controls, Channel search, Off timer, Auto-off power.

Specifications are subject to change without notice.

1708

Printed in Japan Mar. 1989 (So)

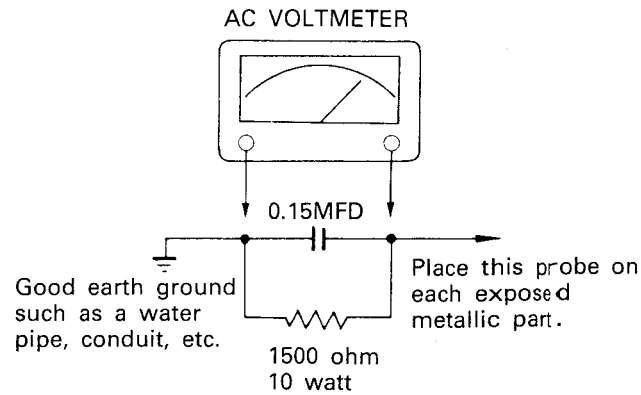
X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 28.8 kV at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed 30.5 kV.
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some parts in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the receiver and AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When repalcing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:
   Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 mfd, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 mfd capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.


AC VOLTMETER
0.15MFD
Good earth ground such as a water pipe, conduit, etc.
Place this probe on each exposed metallic part.
1500 ohm 10 watt

PRODUCT SAFETY NOTICE

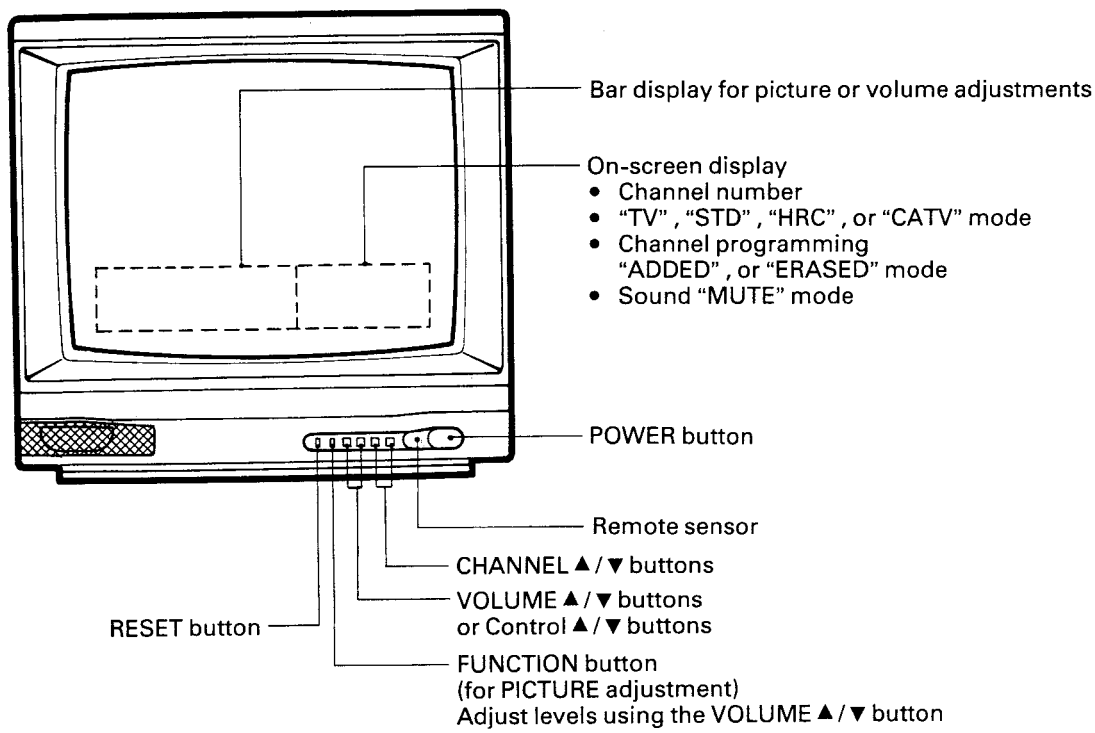
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

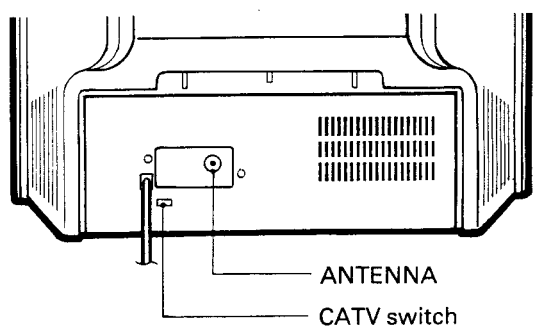
WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" , "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

SERVICE NOTES

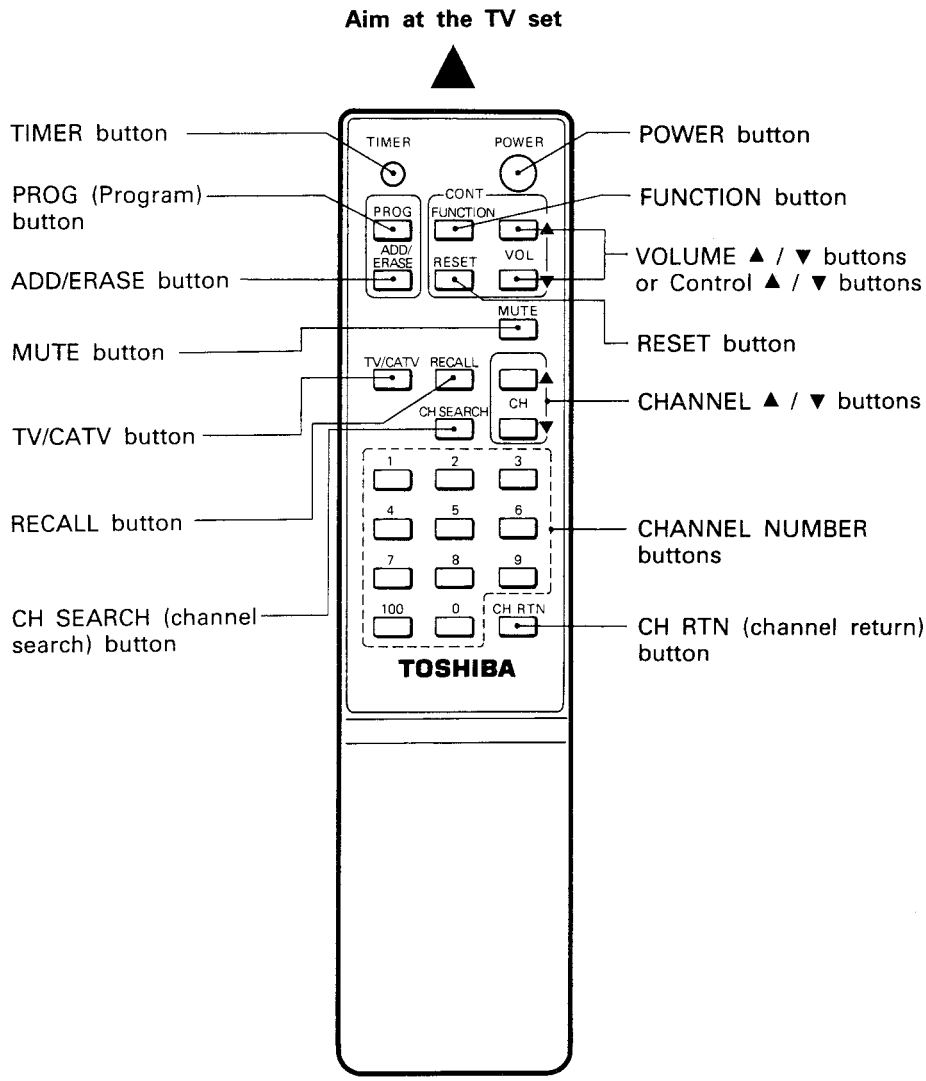
1. When replacing parts or circuit boards, clamp the lead wires to terminals before soldering.
2. When replacing a high wattage resistor (oxide metal film resistor) on circuit board, keep the resistor 10 mm (1/2 in.) away from circuit board.
3. Keep wires away from high voltage or high temperature components.

FRONT CONTROLS AND REAR VIEW


Bar display for picture or volume adjustments
On-screen display
• Channel number
• "TV" , "STD" , "HRC" , or "CATV" mode
• Channel programming "ADDED" , or "ERASED" mode
• Sound "MUTE" mode
POWER button
Remote sensor
CHANNEL ▲ / ▼ buttons
VOLUME ▲ / ▼ buttons or Control ▲ / ▼ buttons
RESET button
FUNCTION button (for PICTURE adjustment) Adjust levels using the VOLUME ▲ / ▼ button



REMOTE CONTROL HAND UNIT



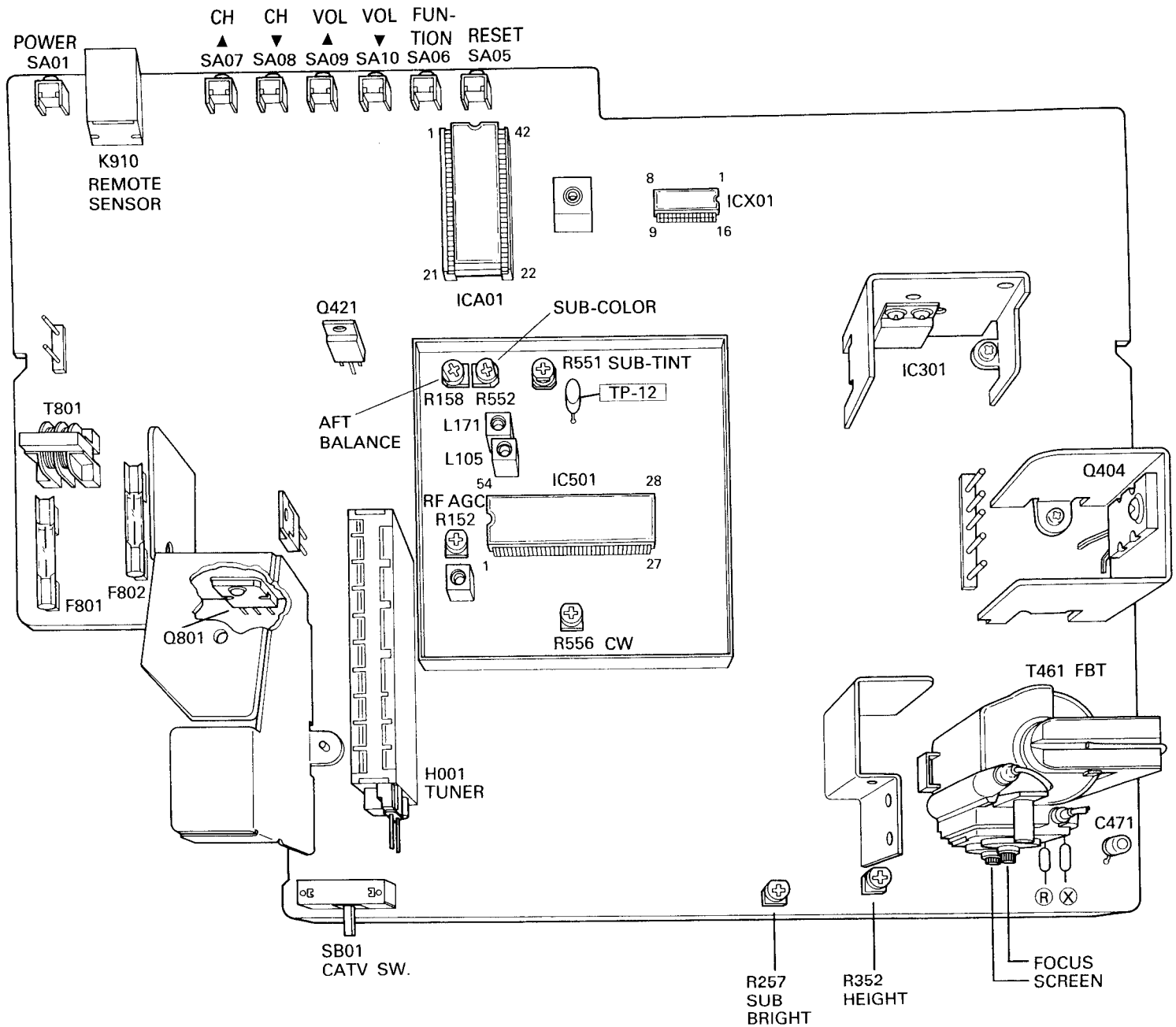


Figure 1. Main Board View

P.C. BOARD TOP VIEW

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" , "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

SET-UP ADJUSTMENT

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

  Perform the adjustments in order as follows:
  1. Color Purity
  2. Convergence
  3. CRT Gray Scale

  Note: The PURITY/CONVERGENCE MAGNET assembly and rubber wedges need mechanical positioning. Refer to figure 2.

COLOR PURITY ADJUSTMENT

NOTE: Before attempting any purity adjustments, the receiver should be operated for at least fifteen minutes.

1. Demagnetize the picture tube and cabinet using a degaussing coil.
2. Set the brightness and contrast to maximum.
3. Adjust RED and BLUE BIAS Controls (R956 and R958) to provide only a green raster. Advance the GREEN BIAS control (R957) if necessary.
4. Loosen the clamp screw holding the yoke and slide the yoke backward or forward to provide vertical green belt (zone) in the picture screen.
5. Remove the Rubber Wedges.
6. Rotate and spread the tabs of the purity magnet (See figure 3.) around the neck of the picture tube until the green belt is in the center of the screen. At the same time, enter the raster vertically.
7. Slowly move the yoke forward or backward until a uniform green screen is obtained. Tighten the clamp screw of the yoke temporarily.
8. Check the purity of the red and blue raster by adjusting the BIAS Controls.

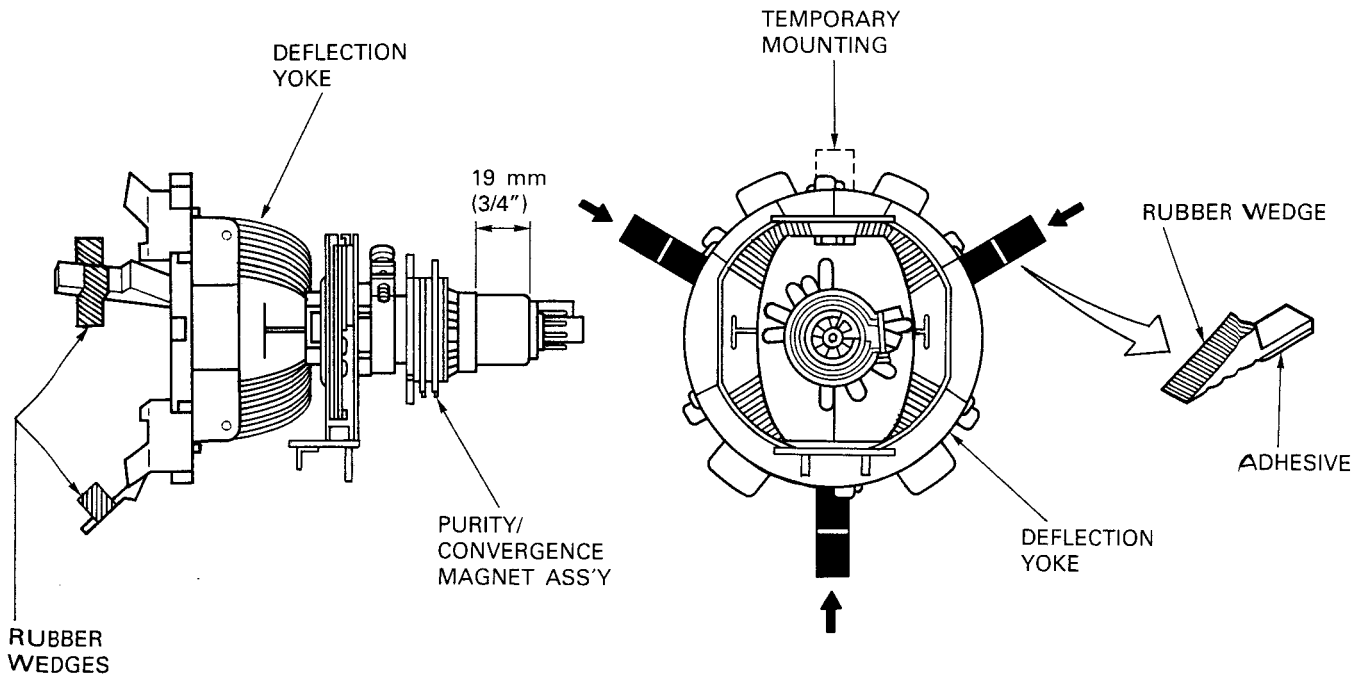


Figure 2.

CONVERGENCE ADJUSTMENTS

NOTE : Before attempting any convergence adjustments, the receiver should be operated for at least fifteen minutes.

■ CENTER CONVERGENCE ADJUSTMENT

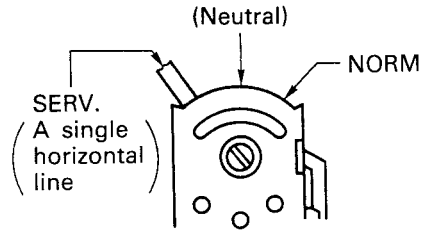
1. Use a crosshatch pattern from a color bar signal generator.
2. Set the brightness and contrast for well defined pattern.
3. Adjust two tabs of the 4-Pole Magnets to change the angle between them (See figure 3.) and superimpose red and blue vertical lines in the center area of the picture screen.
4. Turn the both tabs at the same time keeping the angle constant to superimpose red and blue horizontal lines at the center of of the screen.
5. Adjust two tabs of 6-Pole Magnets to superimpose red/blue line and green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 3, 4, 5 keeping in mind red, green and blue movement, because 4-Pole Magnets and 6-Pole magnets have mutual interaction and make dot movement complex.

■ CIRCUMFERENCE CONVERGENCE ADJUSTMENT

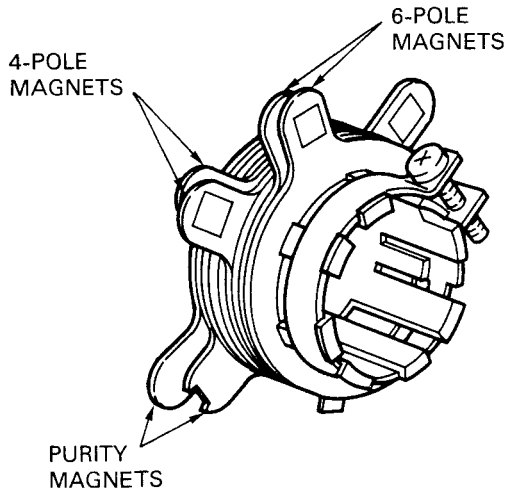
1. Loosen the clamping screw of deflection yoke slightly to allow the yoke to tilt.
2. Temporarily put a wedge as shown in figure 2. (Do not remove cover paper on adhesive part of the wedge.)
3. Tilt front of the deflection yoke up or down to obtain better convergece in circumference. (See figure 4.) Push the mounted wedge into the space between picture tube and the yoke to fix the yoke temporarily.
4. Put other wedge into bottom space and remove the cover paper to stick.
5. Tilt front of the yoke right or left to obtain better convergence in circumference. (See figure 4.)
6. Keep the yoke position and put another wedge in either upper space. Remove cover paper and stick the wedge on picture tube to fix the yoke.
7. Detach the temporarily mounted wedge and put it in another upper space. Stick it on picture tube to fix the yoke.
8. After fixing three wedges, recheck overall convergence.
   Tighten the screw firmly to fix the yoke and check the yoke is firm.
9. Stick three adhesive tapes on wedges as shown in figure 2.

CRT GRAY SCALE ADJUSTMENT

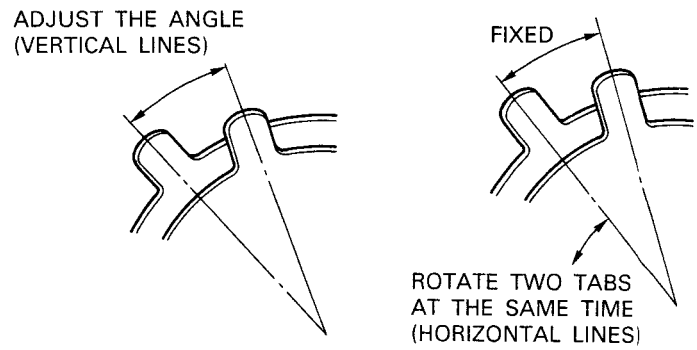
1. Tune in an active channel.
2. Set the color to minimum.
3. Turn the SCREEN Control (on T461) fully counter-clockwise.
4. Set the SERVICE Switch on the CRT DRIVE Board to "SERV." position (see figure below). The picture will become a single horizontal line.



5. Place the RED, GREEN and BLUE BIAS Controls (R956, R957, R958) to the mechanical center.
6. Set the GREEN and BLUE DRIVE Controls (R952, R953) to the mid-position.
7. Gradually rotate the SCREEN Control (on T461) clockwise until the first horizontal line appears slightly on the screen, and leave it.
8. Adjust the remaining two BIAS Controls to obtain the slightly lighted horizontal line in the same levels of three (red, green, blue) colors (The line should be white if the BIAS Controls are adjusted properly.)
9. Set the SERVICE Switch to "NORM." position.
10. Set the brightness and contrast to maximum.
11. Adjust the BLUE and GREEN DRIVE Controls to obtain proper white-balanced picture in high light areas.
12. Adjust the brightness and contrast to obtain dark gray raster. Then check the white balance in low brightness. If the white balance is not proper, retouch the BIAS Controls and DRIVE Controls to obtain a good white balance in both low and high light areas.

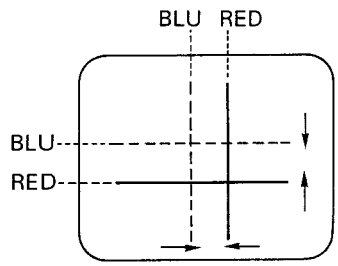


CONVERGENCE MAGNET ASSEMBLY

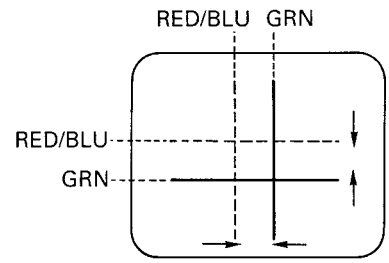


ADJUSTMENT OF MAGNETS

Figure 3.

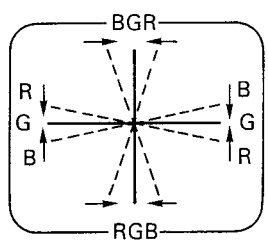


4-POLE MAGNETS MOVEMENT

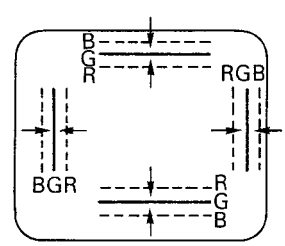


6-POLE MAGNETS MOVEMENT

Center Convergence by Convergence Magnets



INCLINE THE YOKE UP (OR DOWN)



INCLINE THE YOKE RIGHT (OR LEFT)

Circumference Convergence by DEF Yoke

Figure 4. Dot Movement Pattern

CIRCUIT ADJUSTMENT

MAIN BOARD ADJUSTMENTS

PIF TANK COIL ADJUSTMENT

1. Unsolder the solder link ⑥ and connect SWEEP / MARKER GENERATOR as shown in figure 5.
2. Set the FUNCTION switch on the GENERATOR to TV IF position. (40-50MHz sweep)
3. Disconnect the antenna lead and turn on the receiver.
4. Switch 45.75MHz marker on.
5. Apply approx. 5V bias to pin 7 of IC501.
6. Adjust sweep output for 1Vp-p on scope. If necessary, slightly adjust the bias supply.
7. Adjust L105 (PIF TANK) so that the 45.75MHz marker is as low as possible on the high frequency side of the bandpass curve without appreciable lowing the peak of the curve.

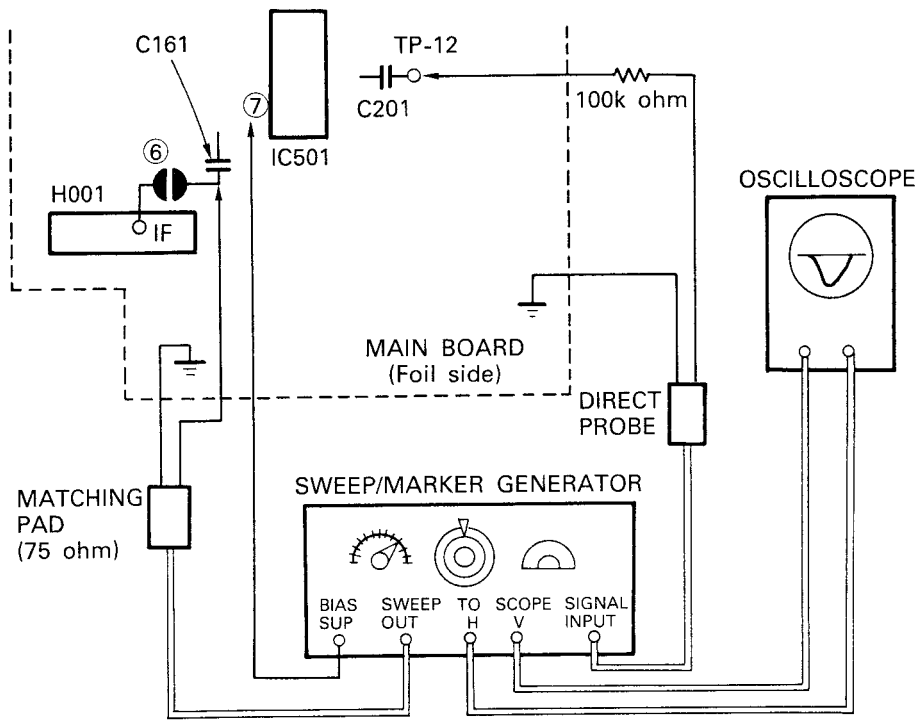


Figure 5. Equipment Hook-up

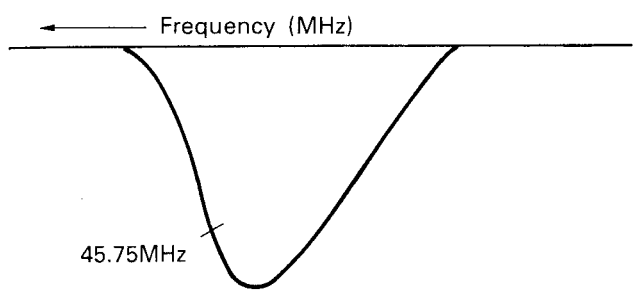


Figure 6. IF Overall Response

MAIN BOARD ADJUSTMENTS

AFT BALANCE ADJUSTMENT

1. Unsolder the solder link ⑥ on foil side of MAIN board.
2. Connect voltmeter (DC range) between the junction of R173 and R174 and chassis ground.
3. Apply 3V bias to pin 7 of IC501.
4. Turn the receiver on.
5. Adjust the R158 (AFT BALANCE) to obtain 4.5V reading on meter.

AFT f_0 ADJUSTMENT

1. Unsolder the solder link ⑥ and connect SWEEP / MARKER GENERATOR as shown in figure 7.
2. Set the FUNCTION switch on the S / M GENERATOR to TV IF position. (40–50MHz sweep)
3. Disconnect the antenna lead and turn on the receiver.
4. Switch 45.75MHz marker on.
5. Adjust sweep output for 3Vp-p on scope.
6. Adjust L171 (AFT f_0) so the 45.75MHz marker is just on the reference level line.

Note : The core of L171 which has two tuning peak points. Adjust at the upper position.

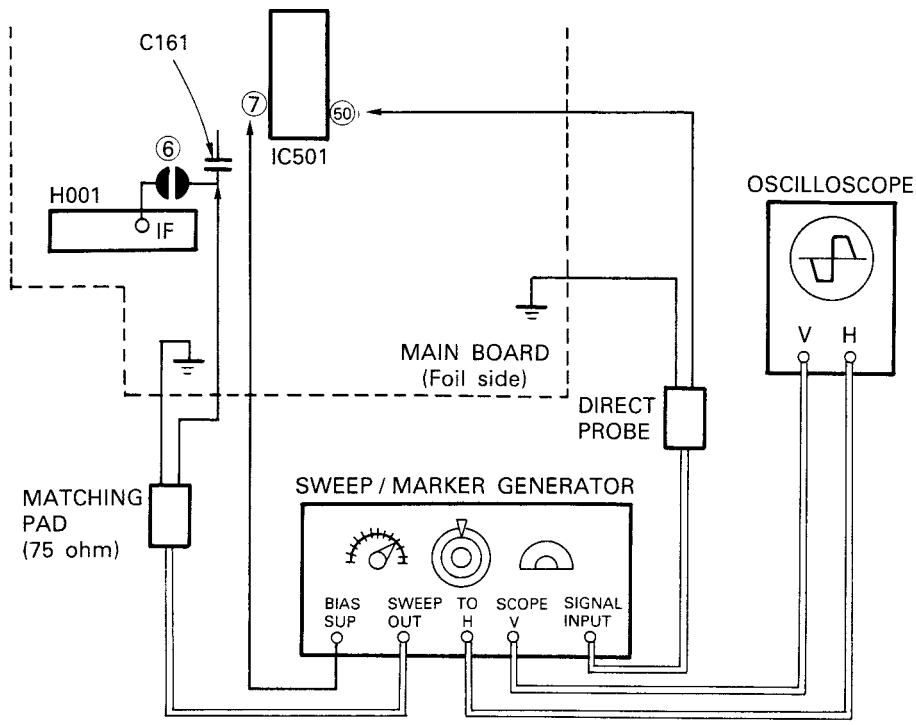


Figure 7. Equipment Hook-up for AFT f_0 Adjustment.

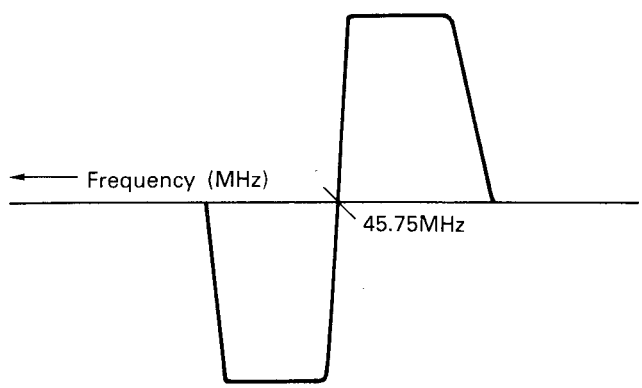


Figure 8. AFT Response Curve

RF AGC ADJUSTMENT

1. Tune in the strongest station in your area.
2. Turn the RF AGC Control (R152) fully counterclockwise, then turn it clockwise until snow noise just disappears from the screen.

SUB-BRIGHT ADJUSTMENT

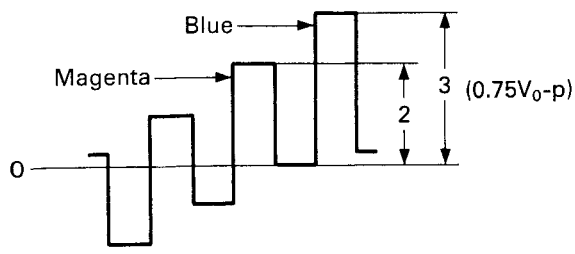
1. Tune in a color program and press the RESET button.
2. Set the SUB-BRIGHT Control (R257) to center and leave the receiver for five minutes in this state.
3. Watching the picture carefully, adjust the SUB-BRIGHT Control to the position where the picture does not show evidence of blooming in high bright area and does not appear too dark in low bright area.
4. Check for proper picture variation by changing the CONTRAST and BRIGHT to both extremes.
5. If the picture does not appear dark with the CONTRAST and BRIGHT minimum or does not appear bright with the maximum, adjust the SUB-BRIGHT Control again for an acceptable picture.

CW ADJUSTMENT

1. Turn off the receiver.
2 Apply 12V to collector of Q421 from external power supply.
3. Short R401 with a jumper wire.
4. Connect 3.3k ohm resistor between pin 44 of IC501 and chassis ground.
5. Apply 3V bias to pin 5 of IC501.
6. Connect frequency counter to terminal ⓓ of connecter P903A and adjust R556(CW) for 3.579545MHz reading on counter.

SUB-TINT AND SUB-COLOR ADJUSTMENTS

1. Receive color-bar signal from color-bar generator.
2. Press the RESET button.
3. Place the SERVICE switch on CRT DRIVE board to the center.
4. Connect oscilloscope to TP-46B (Base of Q904) on CRT DRIVE board.
5. Temporarily adjust R552 (SUB-COLOR) to achieve nealy 1Vp-p of waveform amplitude on scope.
6. Adjust R551 (SUB-TINT) to obtain a blue bar to magenta bar ratio of 3 : 2 as shown below.



7. Adjust R552 (SUB-COLOR) to achieve $0.75V_0$-p of blue bar on scope.
8. Return SERVICE switch to normal position and check with off-air signal.

HEIGHT ADJUSTMENT

The HEIGHT Control (R352) changes the size of the picture or pattern. Make final adjustment to overscan the mask about 10% vertically.

FOCUS ADJUSTMENT

Adjust the FOCUS Control (on T461) for well defined scanning lines on the picture screen.

HIGH VOLTAGE CHECK

CAUTION : There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

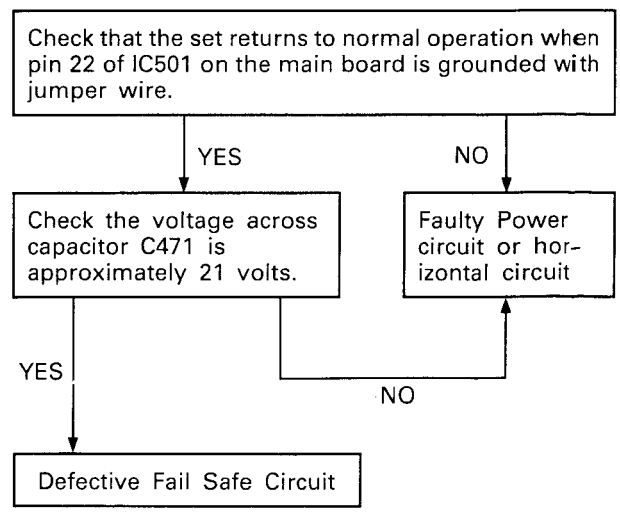
1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHT and CONTRAST Controls to minimum (zero beam current).
3. High voltage must be measured below 30.5 kV.
4. Rotate the BRIGHT Control to both extermes to be sure the high voltage does not exceed the limit under any conditions.

FS CIRCUIT CHECK

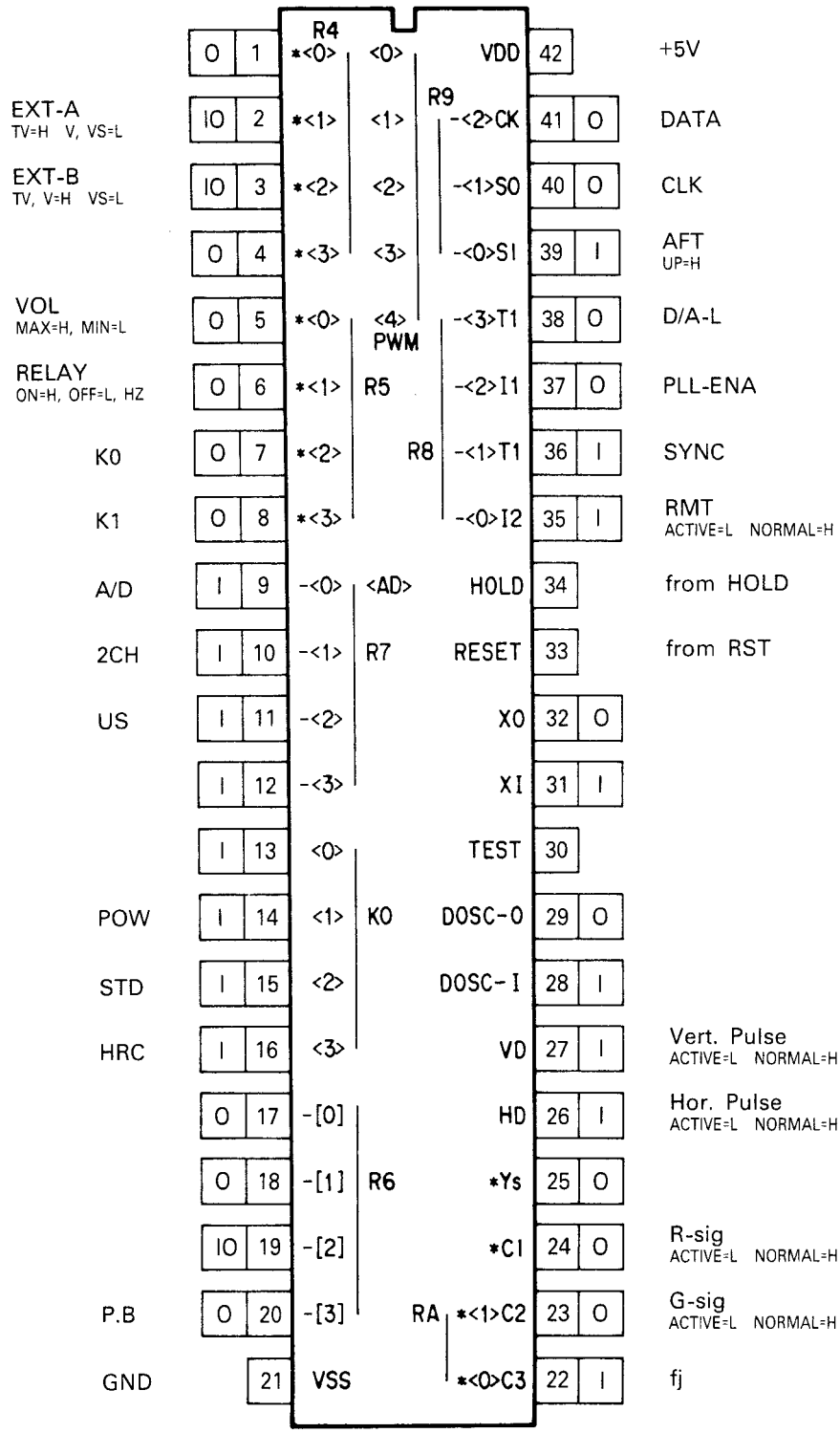
The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on and press the RESET button.
2. Temporarily short TP-Ⓡ and TP-Ⓧ on the MAIN Board with a jumper wire.
   Raster and sound will disappear.
3. The receiver must remain in this state even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the power switch on to produce a normal picture.

Troubleshooting Guide for Fail Safe Circuit

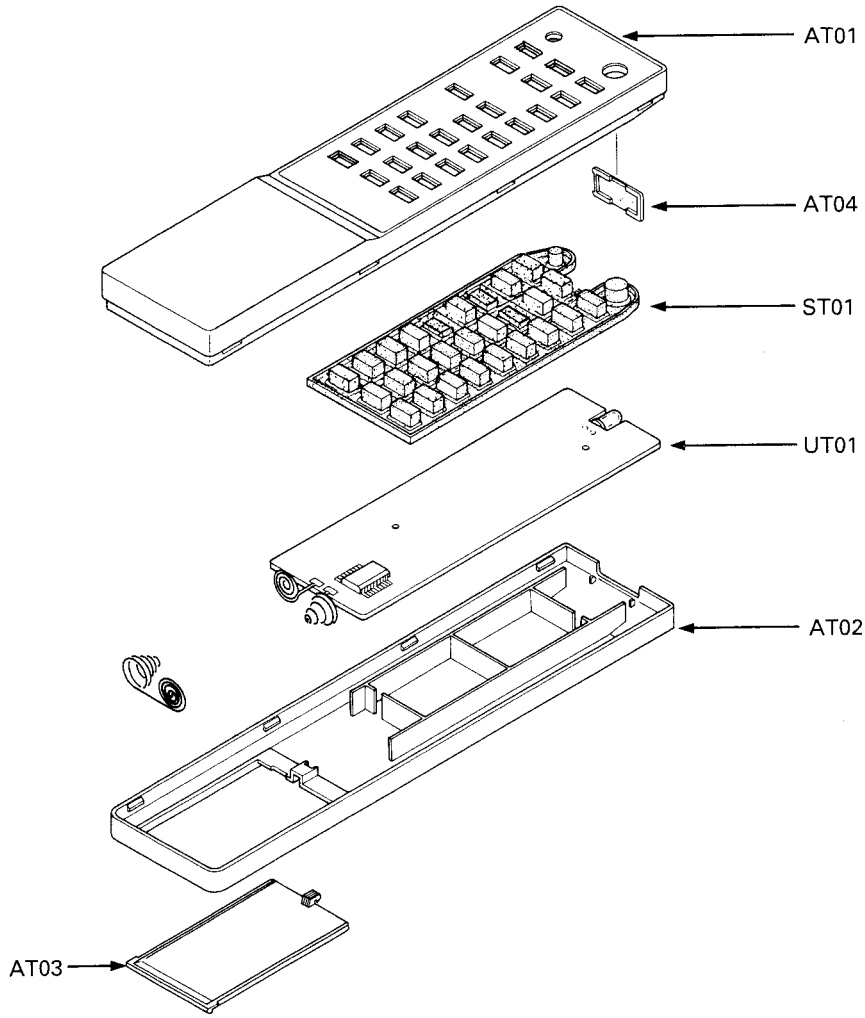

Check that the set returns to normal operation when pin 22 of IC501 on the main board is grounded with jumper wire.
YES
NO
Check the voltage across capacitor C471 is approximately 21 volts.
Faulty Power circuit or horizontal circuit
YES
NO
Defective Fail Safe Circuit

PIN FUNCTION OF MICROPROCESSOR ICA01 (TMP47C634N2453Z)



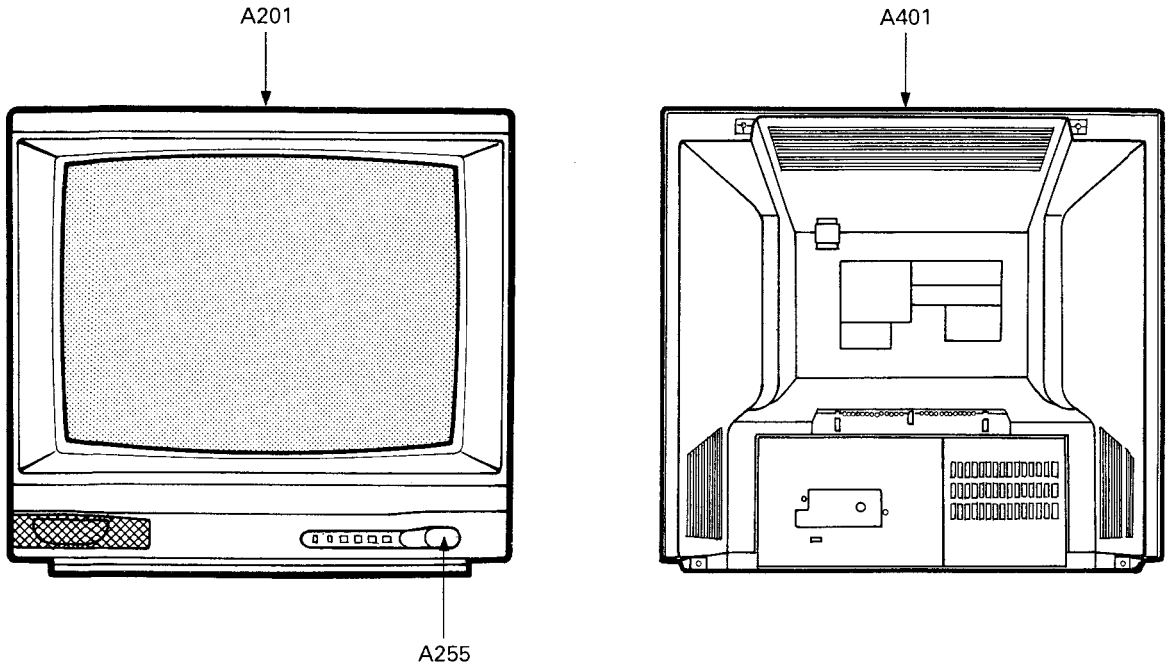
Note :
- K0 : Includes PD resistor
- I : In-port
- O : Out-port
- – : Open drain (Voltage resistant terminal)
- + : Push-Pull
- * : 3-State

TRANSMITTER EXPLODED VIEW AND REPAIR PARTS LIST



Location No.	Part No.	Description
K912	23120459	Remote Hand Unit, CT9347
AT01	23300824	Case, Top
AT02	23300919	Case, Bottom
AT03	23300920	Battery Case
AT04	23300921	Filter
ST01	23300825	Rubber Sheet
UT01	23335514	Remote Hand Unit Board, PW6971
ZT01	23153736	Ceramic Resonator, CSB455EB20

CABINET REPLACEMENT PARTS LIST



CF1922J

Location No.	Part No.	Description
A201	23418029	Front Cover
A255	23443232	Knob
A401	23422867	Back Cover
A701	23924139	Carton Box
A702A	23934365	Packing, Top
A702B	23934366	Packing, Bottom
A703	23941884	Sheet
A901	23989685	Label, Model Number
B110	23162702	Antenna Terminal Frame
Y101	23994611	Owner's Manual
Y107	23142466	Adapter, Antenna Matching
Y126	23124759	Antenna, VHF/UHF
Y134	23998214	Label, Model Number

CF1921J

Location No.	Part No.	Description
A201	23418138	Front Cover
A255	23443232	Knob
A401	23422867	Back Cover
A701	23924139	Carton Box
A702A	23934365	Packing, Top
A702B	23934366	Packing, Bottom
A703	23941884	Sheet
A901	23989685	Label, Model Number
B110	23162702	Antenna Terminal Frame
Y101	23994611	Owner's Manual
Y107	23142466	Adapter, Antenna Matching
Y126	23124759	Antenna, VHF/UHF
Y134	23998215	Label, Model Number

CA20219

Location No.	Part No.	Description
A201	23418167	Frot Cover
A255	23443318	Knob
A401	23422867	Back Cover
A701	23924139	Carton Box
A702A	23934365	Packing, Top
A702B	23934366	Packing, Bottom
A703	23941884	Sheet
B110	23162702	Antenna Terminal Frame
Y101	23994628	Owner's Manual
Y107	23142513	Adapter, Antenna Matching
Y126	23124759	Antenna, VHF/UHF
Y134	23998241	Label, Number
Y136	23992998	Label, Doc/Warning

CA20209

Location No.	Part No.	Description
A201	23418138	Front Cover
A240	70368125	Push Catch for Door
A255	23443232	Knob
A401	23422867	Back Cover
A701	23924139	Carton Box
A702A	23934365	Packing, Top
A702B	23934366	Packing, Bottom
A703	23941884	Sheet
B110	23162702	Antenna Terminal Frame
Y101	23994627	Owner's Manual
Y107	23142513	Adapter, Antenna Matching
Y126	23124759	Antenna, VHF/UHF
Y134	23998240	Label, Model Number
Y136	23992998	Label, Doc/Warning

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" , "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE: The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.

Models CF1922J : CF1921J : CA20219 : CA20209

ABBREVIATIONS:

Capacitors ..... CD : Ceramic Disk PF : Plastic Film EL : Electrolytic
Resistors..... CF : Carbon Film CC : Carbon Composition MF : Metal Film
OMF : Oxide Metal Film VR : Variable Resistor FR : Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C063	24794101	EL, 100μF, 16V
C065	24636479	EL, 4.7μF, 50V
C101	24232103	CD, 0.01μF, +80%, −20%
C102	24232103	CD, 0.01μF, +80%, −20%
C104	24591104	PF, 0.1μF
C105	24794471	EL, 470μF, 16V
C110	24232103	CD, 0.01μF, +80%, −20%
C111	24636478	EL, 0.47μF, 50V
C112	24592563	PF, 0.056μF, ±10%
C141	24436510	CD, 51pF
C142	24436330	CD, 33pF
C161	24232103	CD, 0.01μF, +80%, −20%
C162	24232103	CD, 0.01μF, +80%, −20%
C173	24436130	CD, 13pF
C175	24636478	EL, 0.47μF, 50V
C176	24212102	CD, 1000pF, ±10%
C201	24592104	PF, 0.1μF, ±10%
C202	24436620	CD, 62pF
C205	24232103	CD, 0.01μF, +80%, −20%
C207	24436750	CD, 75pF
C209	24636100	EL, 10μF, 50V
C213	24794221	EL, 220μF, 16V
C215	24636229	EL, 2.2μF, 50V
C222	24636010	EL, 1μF, 50V
C223	24232103	CD, 0.01μF, +80%, −20%
C241	24636339	EL, 3.3μF, 50V
C260	24232103	CD, 0.01μF, +80%, −20%
C301	24617912	EL, 2.2μF, ±10%, 50V
C305	24617912	EL, 2.2μF, ±10%, 50V
C306	24666222	EL, 2200μF, ±20%, 16V
C307	24603473	PF, 0.047μF, ±10%, 100V
C308	24668101	EL, 100μF, ±20%, 35V
C310	24796102	EL, 1000μF, 35V
C311	24214561	CD, 560pF, ±10%, 500V
C313	24082053	PF, 0.1μF, 100V
C314	24591563	PF, 0.056μF
C315	24636229	EL, 2.2μF, 50V
C317	24214471	CD, 470pF, ±10%, 500V
C325	24232103	CD, 0.01μF, +80%, −20%
C401	24436681	CD, 680pF

Location No.	Part No.	Description
C403	24592183	PF, 0.018μF, ±10%
C404	24636010	EL, 1μF, 50V
C406	24794101	EL, 100μF, 16V
⚠ C416	24214182	CD, 1800pF, ±10%, 500V
⚠ C417	24214471	CD, 470pF, ±10%, 500V
C421	24794221	EL, 220μF, 16V
C422	24794331	EL, 330μF, 16V
⚠ C440	24095927	PF, 3300pF, 1600V
⚠ C441	24095929	PF, 2700pF, 1600V
⚠ C442	24828334	PF, 0.33μF, 200V
C445	24833223	PF, 0.022μF, ±10%, 200V
C446	24700100	EL, 10μF, ±20%, 250V
C447	24214392	CD, 3900pF, ±10%, 500V
C448	24640972	EL, 33μF, 160V
C449	24794102	EL, 1000μF, 16V
C463	24212222	CD, 2200pF, ±10%
C471	24636479	EL, 4.7μF, 50V
C473	24632470	EL, 47μF, 10V
C501	24436390	CD, 39pF
C504	24353110	CD, 11pF
C506	24436680	CD, 68pF
C508	24636478	EL, 0.47μF, 50V
C509	24592183	PF, 0.018μF, ±10%
C510	24636229	EL, 2.2μF, 50V
C511	24232103	CD, 0.01μF, +80%, −20%
C512	24591104	PF, 0.1μF
C513	24633100	EL, 10μF, 16V
C514	24592223	PF, 0.022μF, ±10%
C517	24232103	CD, 0.01μF, +80%, −20%
C601	24436470	CD, 47pF
C602	24436220	CD, 22pF
C604	24212102	CD, 1000pF, ±10%
C608	24436100	CD, 10pF, ±0.25pF
C609	24636010	EL, 1μF, 50V
C610	24591682	PF, 6800pF
C612	24642100	EL, 10μF, 160V
C614	24642100	EL, 10μF, 160V
C615	24636479	EL, 4.7μF, 50V
C616	24591104	PF, 0.1μF
C617	24435220	CD, 22pF, 500V
C618	24214102	CD, 1000pF, ±10%, 500V

Location No.	Part No.	Description
⚠ C801	24095852	PF, 0.082μF, ±20%, AC125V
⚠ C802	24094909	CD, 2200pF, +80%, −20%, AC250V
C807	24642100	EL, 10μF, 160V
⚠ C810	24086960	EL, 470μF, 180V
C902	24211331	CD, 330pF, ±10%, 2kV
C931	24436100	CD, 10pF, ±0.25pF
CA31	24436330	CD, 33pF
CA32	24436330	CD, 33pF
CA33	24232103	CD, 0.01μF, +80%, −20%
CA34	24232103	CD, 0.01μF, +80%, −20%
CA42	24232103	CD, 0.01μF, +80%, −20%
CA43	24794470	EL, 47μF, 16V
CA44	24591104	PF, 0.1μF
CA45	24232103	CD, 0.01μF, +80%, −20%
CB57	24636229	EL, 2.2μF, 50V
CB58	24592102	PF, 1000pF, ±10%
CB59	24436561	CD, 560pF
CB60	24591182	PF, 1800pF
CB64	24436101	CD, 100pF
CE02	24232103	CD, 0.01μF, +80%, −20%
CE04	24792222	EL, 2200μF, 6.3V
CE05	24633220	EL, 22μF, 16V
CE07	24232103	CD, 0.01μF, +80%, −20%
CE08	24633100	EL, 10μF, 16V
CE10	24633100	EL, 10μF, 16V
CE12	24700330	EL, 33μF, ±20%, 250V
CE30	24796330	EL, 33μF, 35V
CE36	24094909	CD, 2200pF, +80%, −20%, AC250V

RESISTORS

R065	24366224	CF, 220k ohm
R103	24366102	CF, 1k ohm
R104	24360680	CF, 68 ohm, 1/8W
R106	24366273	CF, 27k ohm
R110	24366221	CF, 220 ohm
R115	24366683	CF, 68k ohm
R141	24366331	CF, 330 ohm
R142	24366471	CF, 470 ohm
R143	24366681	CF, 680 ohm
R152	24066926	VR, 10k ohm, 1/10W
R158	24066922	VR, 200k ohm, 1/10W
R161	24366121	CF, 120 ohm
R162	24366682	CF, 6800 ohm
R163	24366152	CF, 1500 ohm
R164	24366330	CF, 33 ohm
R166	24366391	CF, 390 ohm
R173	24366104	CF, 100k ohm
R174	24366102	CF, 1k ohm
R175	24366224	CF, 220k ohm
R176	24366272	CF, 2700 ohm
R177	24366752	CF, 7500 ohm
R178	24366103	CF, 10k ohm
R179	24366103	CF, 10k ohm
R201	24366681	CF, 680 ohm
R202	24366911	CF, 910 ohm
R203	24366132	CF, 1300 ohm
R204	24366271	CF, 270 ohm
R206	24366562	CF, 5600 ohm
R207	24366471	CF, 470 ohm
R208	24366224	CF, 220k ohm
R209	24366181	CF, 180 ohm
R210	24366751	CF, 750 ohm

Location No.	Part No.	Description
R211	24366301	CF, 300 ohm
R215	24366102	CF, 1k ohm
R216	24366103	CF, 10k ohm
R218	24366823	CF, 82k ohm
R223	24366102	CF, 1k ohm
R227	24366563	CF, 56k ohm
R229	24366224	CF, 220k ohm
R230	24366182	CF, 1800 ohm
R233	24366334	CF, 330k ohm
R236	24366562	CF, 5600 ohm
R237	24366822	CF, 8200 ohm
R240	24366333	CF, 33k ohm
R241	24366224	CF, 220k ohm
R242	24366474	CF, 470k ohm
R244	24366303	CF, 30k ohm
R246	24366303	CF, 30k ohm
R257	24066928	VR, 2k ohm, 1/10W
R260	24366103	CF, 10k ohm
R261	24366113	CF, 11k ohm
R275	24366103	CF, 10k ohm
R293	24552271	OMF, 270 ohm, 1/2W
R294	24366471	CF, 470 ohm
R295	24366102	CF, 1k ohm
R301	24366102	CF, 1k ohm
R302	24552511	OMF, 510 ohm, 1/2W
R303	24366102	CF, 1k ohm
R304	24366203	CF, 20k ohm
R305	24322129	OMF, 1.2 ohm, 1W
R306	24366333	CF, 33k ohm
R307	24366184	CF, 180k ohm
R308	24366913	CF, 91k ohm
R309	24366272	CF, 2700 ohm
R312	24552332	OMF, 3300 ohm, 1/2W
R317	24366683	CF, 68k ohm
⚠ R327	24982569	MF, 5.6 ohm, 1/2W
⚠ R336	24383271	OMF, 270 ohm, 2W
R352	24066924	VR, 50k ohm, 1/10W
R401	24366391	CF, 390 ohm
R402	24381132	OMF, 1300 ohm, 1/2W
R403	24366512	CF, 5100 ohm
R405	24366131	CF, 130 ohm
R406	24366104	CF, 100k ohm
R408	24366560	CF, 56 ohm
R409	24376103	CF, 10k ohm, 1/2W
R410	24366910	CF, 91 ohm
R411	24366331	CF, 330 ohm
⚠ R414	24383123	OMF, 12k ohm, 2W
⚠ R416	24007611	Cement, 2400 ohm, 5W
R421	24360471	CF, 470 ohm, 1/8W
R422	24552390	OMF, 39 ohm, 1/2W
R423	24552180	OMF, 18 ohm, 1/2W
R430	24366102	CF, 1k ohm
R443	24552330	OMF, 33 ohm, 1/2W
R444	24982398	OMF, 0.39 ohm, 1/2W
⚠ R448	24982139	OMF, 1.3 ohm, 1/2W
R449	24982169	OMF, 1.6 ohm, 1/2W
R472	24552270	OMF, 27 ohm, 1/2W
⚠ R475	24366201	CF, 200 ohm
R476	24366823	CF, 82k ohm
R477	24366243	CF, 24k ohm
⚠ R478	24327153	MF, 15k ohm, ±1%, 1/4W
R480	24366103	CF, 10k ohm
R481	24366333	CF, 33k ohm
⚠ R482	24327622	MF, 6200 ohm, ±1%, 1/4W

Location No.	Part No.	Description
R491	24553392	OMF, 3900 ohm, 1W
⚠ R495	24383222	OMF, 2200 ohm, 2W
⚠ R496	24383123	OMF, 12k ohm, 2W
R504	24366332	CF, 3300 ohm
R505	24366333	CF, 33k ohm
R506	24366101	CF, 100 ohm
R507	24366101	CF, 100 ohm
R508	24366101	CF, 100 ohm
R509	24366303	CF, 30k ohm
R510	24366913	CF, 91k ohm
R517	24366183	CF, 18k ohm
R551	24066926	VR, 10k ohm, 1/10W
R552	24066926	VR, 10k ohm, 1/10W
R556	24066924	VR, 50k ohm, 1/10W
R560	24366101	CF, 100 ohm
R561	24366184	CF, 180k ohm
R562	24366473	CF, 47k ohm
R564	24366224	CF, 220k ohm
R565	24366823	CF, 82k ohm
R601	24366102	CF, 1k ohm
R603	24366563	CF, 56k ohm
R604	24366152	CF, 1500 ohm
R605	24366103	CF, 10k ohm
R606	24366332	CF, 3300 ohm
R609	24366272	CF, 2700 ohm
R610	24552200	OMF, 20 ohm, 1/2W
R611	24366333	CF, 33k ohm
R612	24366244	CF, 240k ohm
⚠ R614	24532152	FR, 1500 ohm, 1W
R616	24552223	OMF, 22k ohmm, 1/2W
⚠ R801	24552511	OMF, 510 ohm, 1/2W
R802	24376394	CF, 390k ohm, 1/2W
R803	24377243	CF, 24k ohm, 1W
⚠ R804	24946105	CC, 1M ohm, ±10%, 1/2W
R806	24377243	CF, 24k ohm, 1W
⚠ R808	24000957	PTC Thermistor, 7 ohm, ±20%, AC140V
⚠ R810	24007902	Cement, 2.2 ohm, 7W
⚠ R811	24007854	Cement, 150 ohm, 15W
⚠ R812	24007952	Cement, 6.8 ohm, 5W
⚠ R899	24000902	Varistor
R902	24366101	CF, 100 ohm
R903	24366101	CF, 100 ohm
R904	24366101	CF, 100 ohm
R910	24366391	CF, 390 ohm
R911	24366391	CF, 390 ohm
R912	24366391	CF, 390 ohm
R916	24366820	CF, 82 ohm
R917	24366101	CF, 100 ohm
R918	24366101	CF, 100 ohm
⚠ R920	24000907	FR, 3.9 ohm, 1W
R921	24366101	CF, 100 ohm
R922	24376472	CF, 4700 ohm, 1/2W
R923	24376472	CF, 4700 ohm, 1/2W
R924	24376472	CF, 4700 ohm, 1/2W
R952	24061582	VR, 200 ohm, 1/8W
R953	24061582	VR, 200 ohm, 1/8W
R956	24061578	VR, 5k ohm, 1/8W
R957	24061578	VR, 5k ohm, 1/8W
R958	24061578	VR, 5k ohm, 1/8W
⚠ R960	24554183	OMF, 18k ohm, 2W
⚠ R961	24554183	OMF, 18k ohm, 2W
⚠ R962	24554183	OMF, 18k ohm, 2W
RA02	24366473	CF, 47k ohm

Location No.	Part No.	Description
RA04	24366473	CF, 47k ohm
RA05	24366333	CF, 33k ohm
RA06	24366103	CF, 10k ohm
RA07	24366102	CF, 1k ohm
RA08	24366102	CF, 1k ohm
RA09	24366102	CF, 1k ohm
RA10	24366331	CF, 330 ohm (Canada Model)
RA14	24366103	CF, 10k ohm
RA15	24366103	CF, 10k ohm
RA16	24366103	CF, 10k ohm
RA22	24366473	CF, 47k ohm
RA23	24366202	CF, 2k ohm
RA24	24366202	CF, 2k ohm
RA26	24366103	CF, 10k ohm
RA27	24366103	CF, 10k ohm
RA33	24366102	CF, 1k ohm
RA34	24366102	CF, 1k ohm
RA35	24366103	CF, 10k ohm
RA36	24366103	CF, 10k ohm
RA37	24366102	CF, 1k ohm
RA38	24366102	CF, 1k ohm
RA39	24366103	CF, 10k ohm
RA40	24366102	CF, 1k ohm
RA41	24366102	CF, 1k ohm
RA73	24366102	CF, 1k ohm
RA74	24366102	CF, 1k ohm
RA75	24366103	CF, 10k ohm
RA76	24366103	CF, 10k ohm
RA77	24366103	CF, 10k ohm
RA78	24366103	CF, 10k ohm
RA79	24366103	CF, 10k ohm
RA93	24366333	CF, 33k ohm
RA94	24366683	CF, 68k ohm
RA95	24366223	CF, 22k ohm
RA96	24366103	CF, 10k ohm
RA97	24366103	CF, 10k ohm
RB20	24366823	CF, 82k ohm
RB22	24366103	CF, 10k ohm
RB26	24366103	CF, 10k ohm
RB27	24366103	CF, 10k ohm
RB28	24366104	CF, 100k ohm
RB57	24366301	CF, 300 ohm
RB58	24366244	CF, 240k ohm
RB59	24366133	CF, 13k ohm
RB60	24366392	CF, 3900 ohm
RB61	24366103	CF, 10k ohm
RB64	24366103	CF, 10k ohm
RE05	24366303	CF, 30k ohm
RE06	24366102	CF, 1k ohm
RE07	24366102	CF, 1k ohm
RE08	24366362	CF, 3600 ohm
RE09	24366820	CF, 82 ohm
RE12	24553392	OMF, 3900 ohm, 1W
⚠ RE13	24383822	OMF, 8200 ohm, 2W
⚠ RE14	24007551	Cement, 9100 ohm, 5W
⚠ RE17	24383750	OMF, 75 ohm, 2W
⚠ RE18	24383750	OMF, 75 ohm, 2W
⚠ RE30	24383183	OMF, 18k ohm, 2W
RE36	24552150	OMF, 15 ohm, 1/2W
RE37	24366680	CF, 68 ohm
RX02	24366104	CF, 100k ohm
RX03	24366104	CF, 100k ohm
RX04	24366104	CF, 100k ohm

Location No.	Part No.	Description
COILS & TRANSFORMERS		
L061	23284101	Coil, Peaking, TRF4101KG
L101	23252923	Coil, Choke, TRF9249
L102	23237977	Coil, Peaking, TRF4680AC
L103	23262828	Coil, PIF, TRF1065
L104	23237999	Coil, Peaking, TRF4109AC
L105	23262827	Coil, PIF, TRF1066D
L141	23238712	Coil, Peaking, TRF4150AJ
L142	23237984	Coil, Peaking, TRF4180AC
L145	23238562	Coil, Peaking, TRF4109AJ
L161	23238560	Coil, Peaking, TRF4R68AJ
L171	23262827	Coil, PIF, TRF1066D
L202	23238562	Coil, Peaking, TRF4109AJ
L205	23238704	Coil, Peaking, TRF4680AJ
L301	23103859	Coil (Ferrite Bead), TEM2011
L409	23103859	Coil (Ferrite Bead), TEM2011
L410	23103859	Coil (Ferrite Bead), TEM2011
L411	23221739	Coil, Choke, TRF9252D
L444	23221722	Coil, Choke, TLN3142D
⚠ L462	23227270	Deflection Yoke, TDY-320FS
L603	23238709	Coil, Peaking, TRF4270AJ
L604	23252905	Coil, SIF Discri, TRF6020D
L901	23200919	Coil, Degaussing, TSB2100
LA01	23238562	Coil, Peaking, TRF4109AJ
LA02	23262776	Coil, IF Coil, TRF1114
T401	23224983	Transformer, Horiz. Drive, TLN1039
⚠ T461	23226416	Transformer, Flyback, TFB4029AD
T661	23216941	Transformer, Speaker, TSP1063
⚠ T801	23211922	Line Filter, TRF3127
SEMICONDUCTORS		
IC301	23119548	IC, AN5515
IC501	B0383100	IC, TA8680N
ICA01	23318918	IC, 47C634N2453
ICX01	23318627	IC, μPD6336C
Q141	A6534040	Transistor, 2SA1015-Y
Q161	A6708871	Transistor, 2SC388ATM
Q171	A6534040	Transistor, 2SA1015-Y
Q172	A6317440	Transistor, 2SC1815-Y
Q201	A6534040	Transistor, 2SA1015-Y
Q202	A6317440	Transistor, 2SC1815-Y
Q290	A6509120	Transistor, 2SA562TM-O
Q301C	23030211	Screw, 3X14SN
Q402	A6330069	Transistor, 2SC2482 FA-1
⚠ Q404	A6868654	Transistor, 2SD1426
Q404C	23030211	Screw, 3X14SN
Q421	A6848520	Transistor, 2SD880-Y
Q422	A6333346	Transistor, 2SC2655-Y
Q471	A6534020	Transistor, 2SA1015-O
Q602	A6317440	Transistor, 2SC1815-Y
Q603	A6328333	Transistor, 2SC2383-Y
Q604	A6533750	Transistor, 2SA1013-O
Q605	A6325077	Transistor, 2SC2230A-GR
⚠ Q801	A6867051	Transistor, 2SD1294
⚠ Q803	A6907751	Transistor, S1854
Q902	A6330059	Transistor, 2SC2482
Q903	A6330059	Transistor, 2SC2482
Q904	A6330059	Transistor, 2SC2482

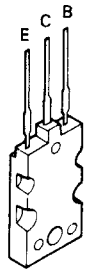
Location No.	Part No.	Description
QB20	A6002010	Transistor, RN1201
QB21	A6317440	Transistor, 2SC1815-Y
QB59	A6534040	Transistor, 2SA1015-Y
QB60	A6317440	Transistor, 2SC1815-Y
QE02	A6534040	Transistor, 2SA1015-Y
QE03	A6317440	Transistor, 2SC1815-Y
QE10	A6330059	Transistor, 2SC2482
QE35	A6333346	Transistor, 2SC2655-Y
D204	A7150258	Diode, 1SS176
D205	A7150258	Diode, 1SS176
D206	A7150258	Diode, 1SS176
D210	A7150258	Diode, 1SS176
D211	A7150258	Diode, 1SS176
D213	A7150258	Diode, 1SS176
D290	A7150258	Diode, 1SS176
D291	A7150258	Diode, 1SS176
D301	A7568460	Diode, TVR-1B
D302	A7978850	Diode, S5295G
D309	A7978850	Diode, S5295G
D401	A7116925	Diode, Zener, 04AZ9.1Z
D405	A7150258	Diode, 1SS176
D406	A7978850	Diode, S5295G
D408	A7580656	Diode, 3JH61 (FA2)
D421	A7116915	Diode, Zener, 04AZ9.1Y
D422	A7150258	Diode, 1SS176
D423	A7150258	Diode, 1SS176
D471	A7568460	Diode, TVR-1B
⚠ D472	23115774	Diode, Zener, RD6.2E (4)
D491	A7150258	Diode, 1SS176
D492	A7150258	Diode, 1SS176
D506	A7117205	Diode, Zener, 04AZ12X
D507	A7117205	Diode, Zener, 04AZ12X
D508	A7117205	Diode, Zener, 04AZ12X
D561	A7150258	Diode, 1SS176
D602	A7150258	Diode, 1SS176
D801	A7568754	Diode, 1S1887A FA-1
D802	A7568754	Diode, 1S1887A FA-1
D803	A7568754	Diode, 1S1887A FA-1
D804	A7568754	Diode, 1S1887A FA-1
⚠ D806	A7150258	Diode, 1SS176
⚠ D819	A7117715	Diode, Zener, 04AZ20Y
DA23	A7150258	Diode, 1SS176
DA24	A7150258	Diode, 1SS176
DA42	A7116515	Diode, Zener, 04AZ6.2Y
DB16	A7150258	Diode, 1SS176
DB17	A7150258	Diode, 1SS176
DB18	A7150258	Diode, 1SS176
DE01	A7568752	Diode, 1S1887A
DE02	A7150258	Diode, 1SS176
DE03	A7150258	Diode, 1SS176
DE04	A7986480	Diode, S5500G
DE05	A7150258	Diode, 1SS176
DE12	A7116215	Diode, Zener, 04AZ4.7Y
DE30	23115922	Diode, Zener, μPC574J (M)
DE34	A7568752	Diode, 1S1887A
DE35	A7116105	Diode, Zener, 04AZ4.3X
DE38	A7116615	Diode, Zener, 04AZ6.8Y
MISCELLANEOUS		
⚠ F801	23144848	Fuse, 3.0A
F801A	23165081	Fuse Holder
⚠ F802	23144847	Fuse, 1.2A
F802A	23165081	Fuse Holder
K910	23120439	Remote Sensor, IR-9103-K

Location No.	Part No.	Description
⚠ P002	23142515	Antenna Terminal, AT545S
⚠ P801	23176733	Power Cord
S201	23145682	Switch, Lever, 1C3P
SA01	23145227	Switch, Push, 1C1P
SA05	23145227	Switch, Push, 1C1P
SA06	23145227	Switch, Push, 1C1P
SA07	23145227	Switch, Push, 1C1P
SA08	23145227	Switch, Push, 1C1P
SA09	23145227	Switch, Push, 1C1P
SA10	23145227	Switch, Push, 1C1P
SB01	23145318	Switch, Slide, 2C3P
⚠ SR81	23146917	Power Relay, DG1U-48
⚠ V901A	23902022	Socket, CRT, 8P
V901M	23102983	Magnet, Purity-Convergence, MAG1008
W661	23151321	Speaker, SPK-1253 50x90mm, 8 ohm
X201	23250873	Coil, Delay Line, TRF2079
X401	23153721	Ceramic Resonater, TCR1023
X501	23153961	Crystal, 3.58MHz
XA01	23153845	Ceramic Resonator, 4MHz, TCR1015
Z101	A5610690	PIF SAW Filter, F1032B
Z141	23107976	Ceramic Video Trap, 4.5MHz, TPS4.5MC2
Z601	23107932	Ceramic Filter, 4.5MHz, TCF1006
PC BOARD ASSEMBLIES		
M051Z	23335463	Main Board, PW9084-1 (USA Model)
M051Z	23335575	Main Board, PW9115-1 (Canada Model)
M052Z	23335464	CRT Drive Board, PW9084-2 (USA Model)
M052Z	23335576	CRT Drive Board, PW9115-2 (Canada Model)
PICTURE TUBE		
⚠ V901	23112322	Picture Tube, A48JQH93XLW (SVC)
TUNER		
⚠ H001	23121639	Tuner, VHF/UHF, TN-EL811LX1 (USA Model)
⚠ H001	23121641	Tuner, VHF/UHF, TN-EL811L (Canada Model)

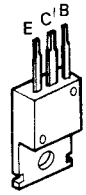
Location No.	Part No.	Description

TERMINAL VIEW OF TRANSISTORS

① 2SD1426



② 2SC2073
2SD880



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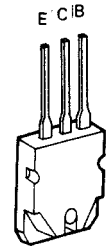
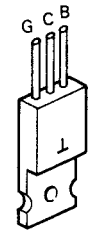


④ S1854



⑤ 2SA1013
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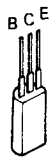
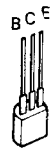
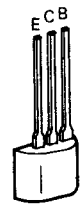
2SC2383
2SC2482
2SC2655



⑥ 2SA562TM
2SA1015
2SA817
2SC1815
2SC388ATM



⑦ RN1201
RN1203
RN1204



MEMO

SCHEMATIC DIAGRAM MODELS : CF1922J Chassis No. TAC8920 :
CA20219 Chassis No. TAC8925 :

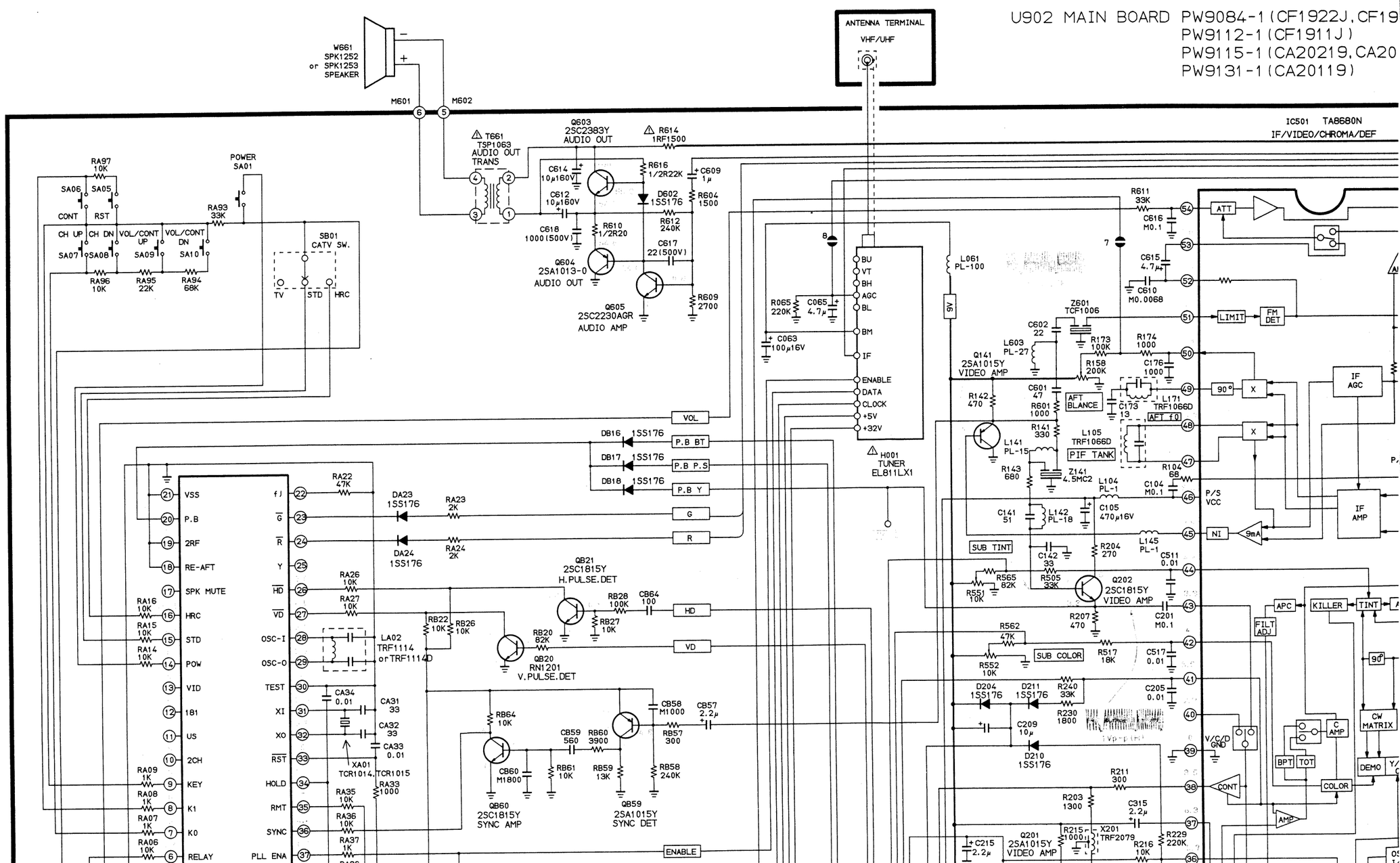
WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" , "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt 1/2S = Carbon con
   1RF = Fuse resistor of 1 watt 10W = Cement of
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the follo
   ⊣|⊢ Electolytic capacitor Ⓜ ⊣|⊢ Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be rep

U902 MAIN BOARD PW9084-1(CF1922J,CF19
PW9112-1(CF1911J)
PW9115-1(CA20219,CA20
PW9131-1(CA20119)



ICA01
TMP47C634N-2453Z
MICROPROCESSOR

ICX01 μPD6336C
D/A CONVERT.DIGITAL CONTROL

K910
REMOTE-SENSOR
IR-9102M
or IR-9103K

QB20
RN1201
V.PULSE.DET

QB60
2SC1815Y
SYNC AMP

QB59
2SA1015Y
SYNC DET

QE03
2SC1815Y
INITIALIZE

QE10
2SC2482
RELAY DRIVE

Q172
2SC1815Y
AFT AMP

Q171
2SA1015Y
AFT DET

QE35
2SC2655Y,O
5V REGU

Q422
2SC2655Y,O
VOLT REGU

Q471
2SA1015-O
FAIL SAFE

Q201
2SA1015Y
VIDEO AMP

Q421
2SD880Y
or2SD2023F18E
9V REGU

Q801
2SD1294FA
VOLT.REGU

DE04
S5500G

T801
TRF-3127

P801
POWER
CORD

L901
TSB2100
DEGAUSSING
COIL

AC120V
60Hz

PAIR US

A	Q803	S
	D819	
B	Q803	S
	D819	

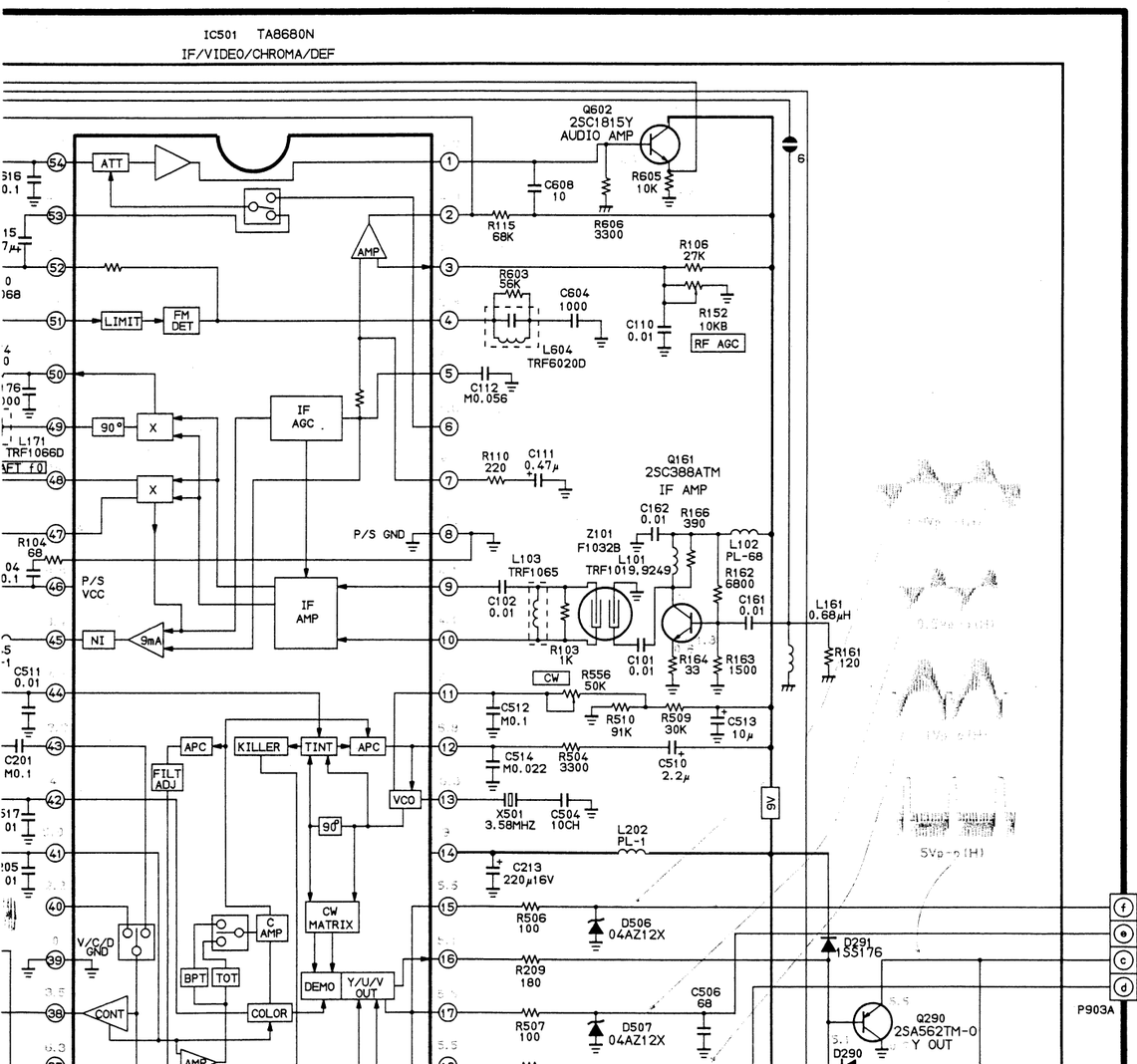
J **Chassis No. TAC8920 : CF1921J** **Chassis No. TAC8920**
19 **Chassis No. TAC8925 : CA20209** **Chassis No. TAC8925**

K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon
ted as the following marks.
of 1/2 watt 1/2S = Carbon compsistion of 1/2 watt
t 10W = Cement of 10 watt
= ±1%
ematic, all capacitor values less than 1 are expressed in μF, and the values

V, unless otherwise noted as the following marks.
or Ⓜ Mylar capacitor
cial characteristics, and should be replaced with identical parts only.

4. Voltages read with DIGITAL MULTI-METER from point indicated to chassis ground, using a color bar signal with all controls at normal, line voltage 120 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.
7. Solder links 1 to 7 can be used to measure +B current and to check the power circuit independently of the other circuit.

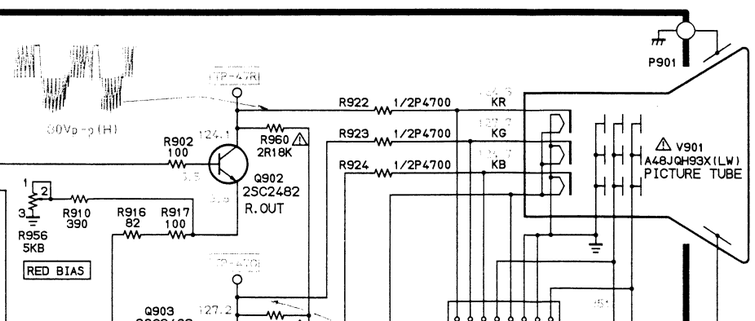
RD PW9084-1(CF1922J,CF1921J)
PW9112-1(CF1911J)
PW9115-1(CA20219,CA20209)
PW9131-1(CA20119)



DIFFERENCES BETWEEN USA AND CANADA MODELS

DIFFERENT PARTS \ MODELS		USA	CANADA
		CF1922J CF1921J CF1911J	CA20219 CA20209 CA20119
MAIN BOARD	PW NO.	PW9084,PW9112	PW9115,PW9131
	RA10	OPEN	ADD
	H001	EL811LX1	EL811L

CRT DRIVE BOARD PW9084-2(CF1922J,CF1921J)
PW9112-2(CF1911J)
PW9115-2(CA20219,CA20209)
PW9131-2(CA20119)



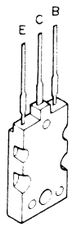
PW9131-2(CA20119)

PAIR USE

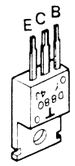
A	Q803	S1854FA
	D819	04AZ20Y
B	Q803	S1854FA-2
	D819	04AZ20Z

TERMINAL VIEW OF TRANSISTOR

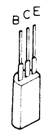
① 2SD1426



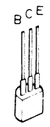
② 2SD880



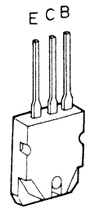
③ 2SA1013
2SC2230A
2SC2383
2SC2482
2SC2655



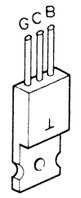
④ 2SA562TM
2SA1015
2SA817
2SC1815
2SC388ATM



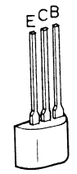
⑤ 2SD1294



⑥ S1854

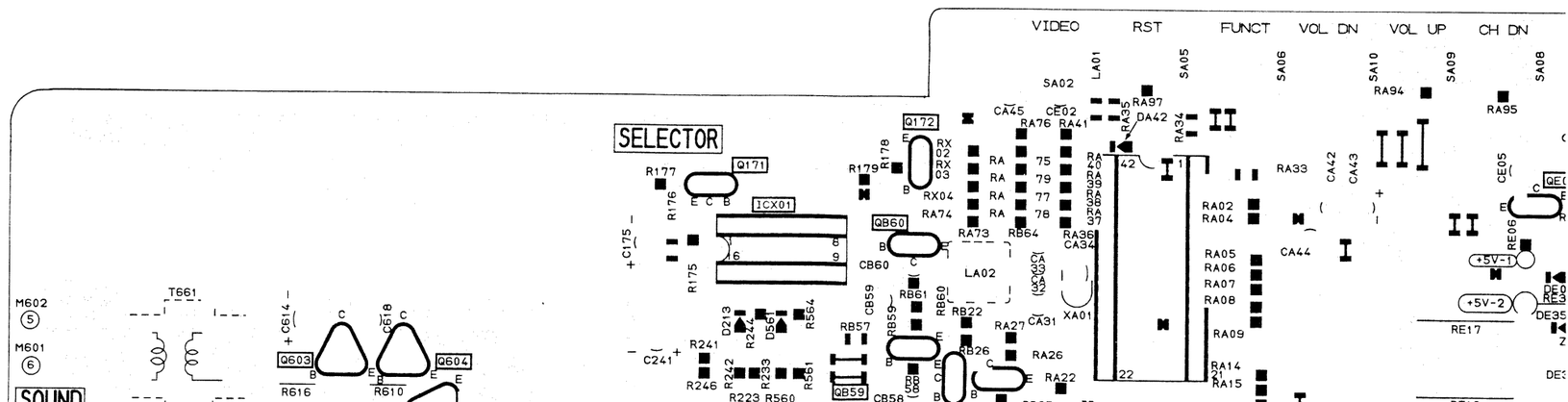


⑦ RN1201

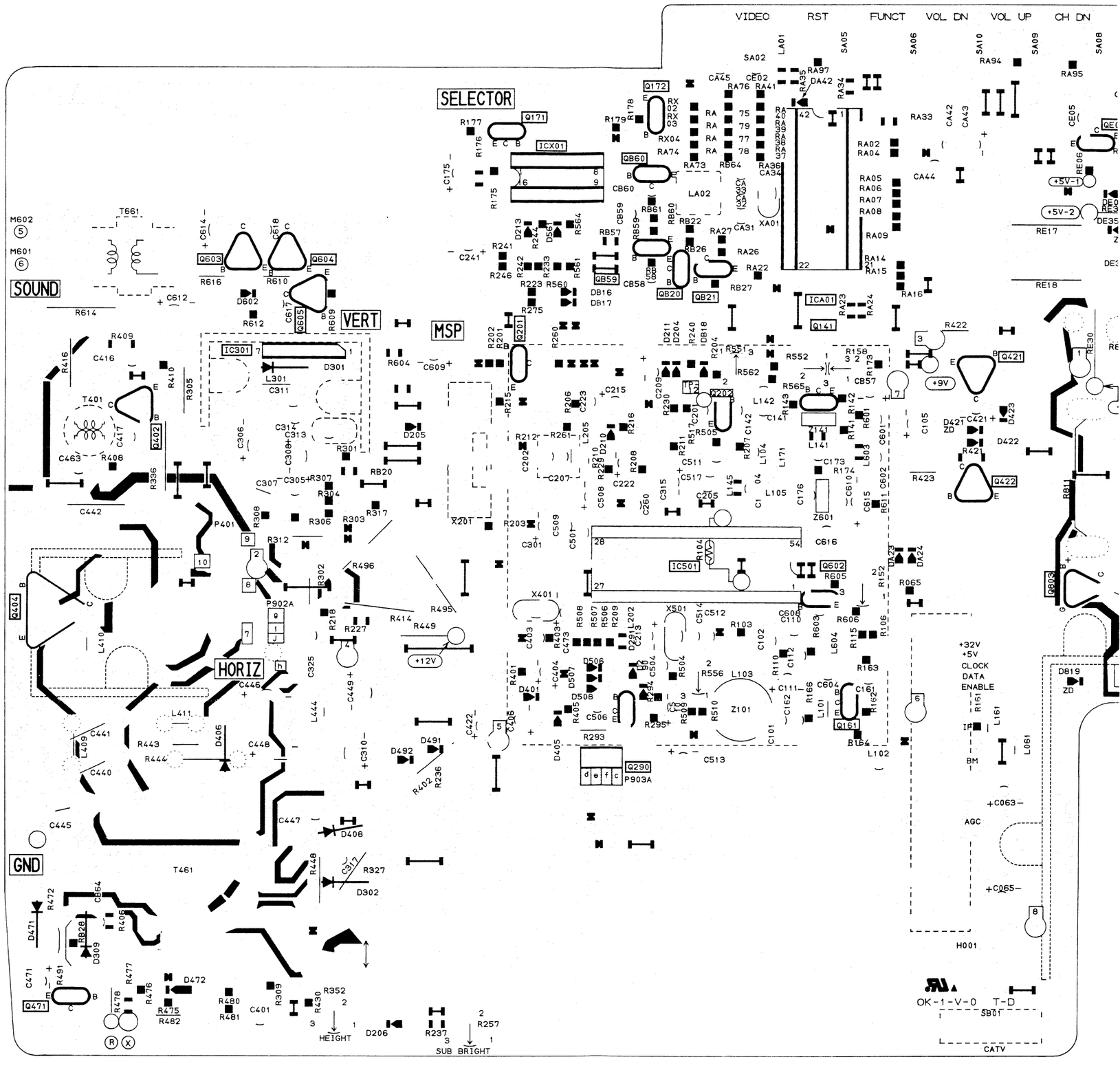


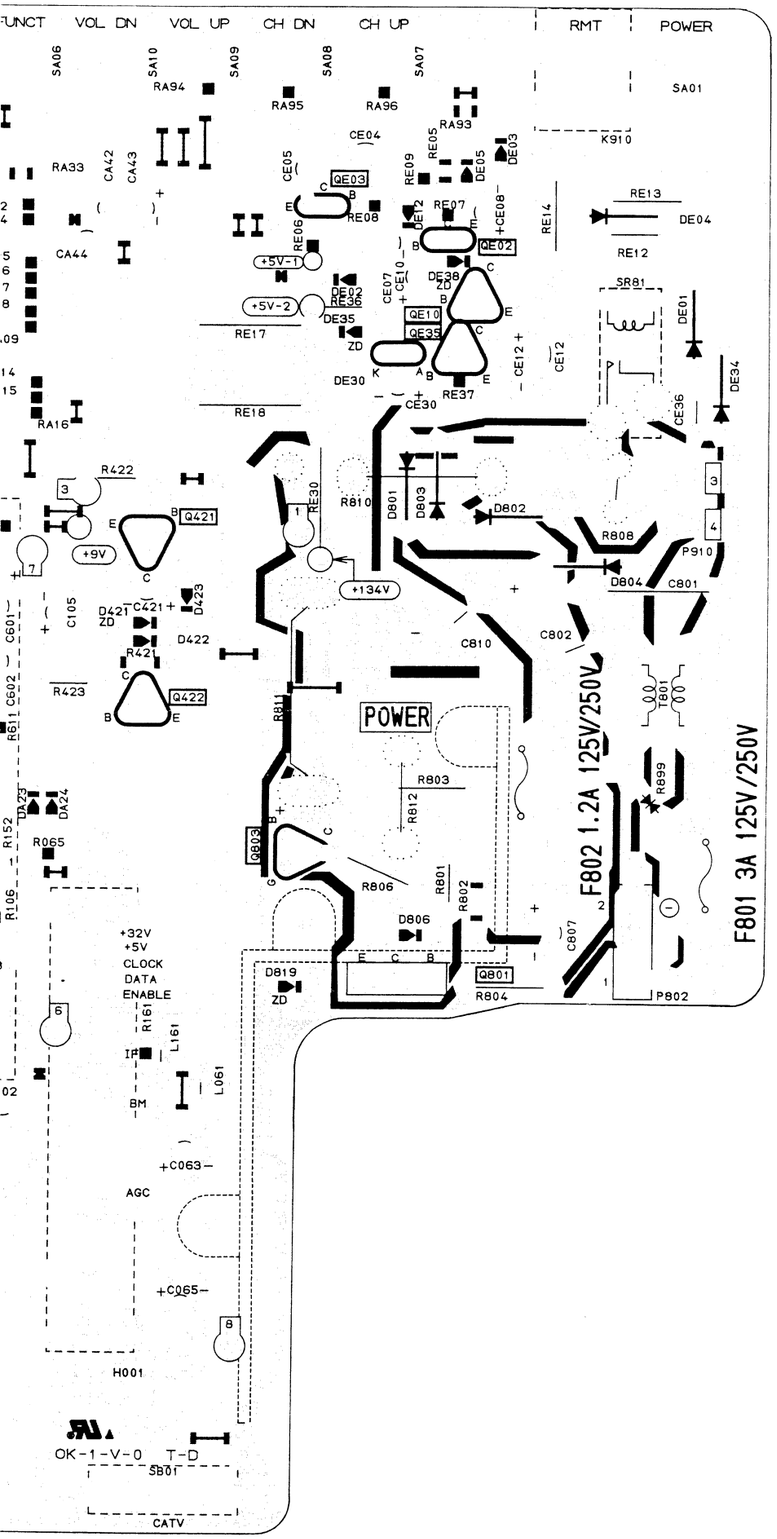
MAIN BOARD

BOTTOM (FOIL) SIDE



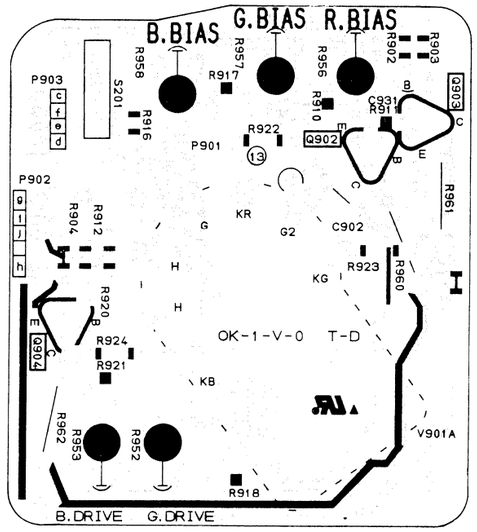
BOTTOM (FOIL) SIDE





CRT DRIVE BOARD

BOTTOM (FOIL) SIDE



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PHONE: (312) 541-9400
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CALGARY: 115, 28TH STREET, S.E. CALGARY, ALBERTA, T2A 5K4, CANADA, PHONE: (403) 273-6906

TOSHIBA CORPORATION

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